

### ABSTRACT OF THE DISCLOSURE

Methods to introduce highly phosphorylated mannopyranosyl oligosaccharide derivatives containing mannose 6-phosphate (M6P), or other oligosaccharides bearing other terminal hexoses, to carbonyl groups on oxidized glycans of glycoproteins while retaining their biological activity are described. The methods are useful for modifying glycoproteins, including those produced by recombinant protein expression systems, to increase uptake by cell surface receptor-mediated mechanisms, thus improving their therapeutic efficacy in a variety of applications.

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